L-591

300202

GENERAL INFORMATION

Description

The L-591 cell line is one of several neoplastic cell lines derived from patients with Hodgkin's disease, specifically of the nodular sclerosing subtype. It was established as part of a group of Hodgkin's lymphoma cell lines, including L-428 and L-540, and has been instrumental in advancing the understanding of this hematologic malignancy. L-591 cells are characterized by aneuploidy and exhibit various structural and numerical chromosomal abnormalities, which are indicative of their neoplastic origin. The line is particularly valuable in research due to its distinct chromosomal patterns and its ability to proliferate in vitro, making it a reliable model for studying the cellular mechanisms of Hodgkin's lymphoma.

One of the defining features of L-591 cells is their immunophenotype. The cells express Ia-like antigens and receptors associated with T cells but lack markers typical of other hematopoietic lineages, such as myeloid cells, monocytes, and macrophages. Notably, L-591 cells do not produce surface or cytoplasmic immunoglobulins, nor do they exhibit Epstein-Barr Virus (EBV)-specific antigens, such as EBNA. This absence of immunoglobulins and EBV antigens distinguishes L-591 from other EBV-positive Hodgkin's lymphoma cell lines and highlights its utility in exploring the specificities of Hodgkin's lymphoma pathology that are independent of EBV infection.

The L-591 cell line is morphologically similar to the Reed-Sternberg (RS) and Hodgkin (H) cells that are characteristic of Hodgkin's lymphoma. These cells play a crucial role in the research of Hodgkin's disease, serving as a model for understanding the pathogenesis of the disease and for identifying potential therapeutic targets. The unique features of L-591, combined with its established use in laboratory settings, make it an essential tool in the study of Hodgkin's lymphoma, contributing significantly to the body of knowledge surrounding this complex malignancy.

Tissue	Pleural effusion
Disease	Hodgkin lymphoma

Synonyms

- L 591
- L591

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Suspension
Biosafety level	2

CHARACTERISTICS

Morphology	Round cells
Cell type	Lymphoblast

IDENTIFIERS

Citation

L-591 (Cytion catalog number 300202)

NCBI TaxID	9606
Cellosaurus	CVCL_1867

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HANDLING AND CULTURE

Culture medium

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% FBS, 1 mM sodium pyruvate, 1% NEAA

Subculturing

Maintain cultures by periodically adding or replacing the medium. Initiate cultures with a density of 5 x 10^5 cells/ml and keep the cell concentration within the range of 3 x 10^5 to 1 x 10^6 cells/ml for optimal growth.

Seeding density	3x10^5/ml

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
Upon receipt, either store the cryovial immediately at temperatures below -150°C to ensure the preservation of cellular integrity, or proceed to step 3 if immediate culturing is required.
For immediate culturing, swiftly thaw the vial by immersing it in a 37°C water bath with clean water and an antimicrobial agent, agitating gently for 40-60 seconds until a small ice clump remains.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
Carefully open the disinfected vial and transfer the cell suspension into a 15 ml centrifuge tube containing 8 ml of room-temperature culture medium, mixing gently.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
Gently resuspend the cell pellet in 10 ml of fresh culture medium. For adherent cells, divide the suspension between two T25 culture flasks; for suspension cultures, transfer all the medium into one T25 flask to promote effective cell interaction and growth.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

Sterility

Mycoplasma contamination is excluded using both PCR-based assays and luminescence-based mycoplasma detection methods.
To ensure there is no bacterial, fungal, or yeast contamination, cell cultures are subjected to daily visual inspections.

Freeze medium	As a cryopreservation medium, we use complete growth medium (including FBS) + 10% DMSO for adequate post-thaw viability, or CM-1 (Cytion catalog number 800100), which includes optimized osmoprotectants and metabolic stabilizers to enhance recovery and reduce cryo-induced stress.

Storage conditions

For long-term preservation, place vials in vapor-phase liquid nitrogen at about −150 to −196 °C. Storage at −80 °C is acceptable only as a short interim step before transfer to liquid nitrogen.

Shipping conditions

Cryopreserved cell lines are shipped on dry ice in validated, insulated packaging with sufficient refrigerant to maintain approximately −78 °C throughout transit. On receipt, inspect the container immediately and transfer vials without delay to appropriate storage.

DONOR

Donor age	31 years

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes

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